

REMARKS

Applicants submit the following amendments and remarks in response to the Final Action mailed June 13, 2008. A Petition for a Two-Month Extension of Time extending the time for responding to the Office Action from September 13, 2008 to and including November 13, 2008 is submitted herewith.

Claims 21-30, 41, 43, and 47 were rejected in the Action. Claims 21 and 23-26 are amended and claims 22, 43 and 47 are canceled herein. No claims have been added. Therefore, claims 21, 23-30 and 41 are pending in the present application. Support for all claim amendments can be found in Applicants' originally filed disclosure in at least paragraphs [0109]-[0110]. As such, no new matter has been added. Applicants set forth remarks relating to the Office Action below.

Applicants would like to thank the Examiner for conducting an interview with Applicants' undersigned attorney on October 20, 2008. The substance of the interview focused on the teachings of U.S. Patent No. 5,370,697 to Baumgartner ("Baumgartner"). This Interview is evidenced by the Examiner's Interview Summary of October 23, 2008 ("the Summary") which will be referred to below.

In the Action, the Examiner objected to the specification under MPEP § 608.01(o) as failing to provide proper antecedent basis for the claimed subject matter. The Examiner asserted that the limitation that only the perimeter of the wire mesh is disposed in the groove such that only the perimeter is in contact with a coating was not described in the written disclosure. The Examiner opined that paragraphs [0180] and [0181] of the specification disclose that the coating is used to secure the mesh to the baseplate, but it does not exclude placing the coating over the entire surface or the mesh being devoid of the coating. Further, the Examiner rejected claims 21-30, 41, 42, 44-46 under 35 U.S.C. 112, first

paragraph, as failing to comply with the written description requirement. The Examiner asserted that paragraph [0179] of Applicants' disclosure describes the coating as burying the mesh to secure it to the baseplate. The Examiner also asserted that paragraph [0181] of Applicants' disclosure states that the coating is on the mesh. Therefore, the examiner contended that there is no support for the coating to be only on the mesh in the groove and not on the central portion of the mesh.

In the previous Amendment filed February 25, 2008, Applicants attempted to explain that claim 21 did not recite that the vertebral body contact element has a coating wherein the coating is only on the perimeter of the vertebral body contact element as asserted by the Examiner. In contrast, Applicants argued that claim 21 required that 1) the groove of the baseplates have a coating; 2) that the vertebral body contact element has a perimeter, wherein only the perimeter is in the groove; and therefore, 3) only the perimeter of the vertebral body contact element is in contact with the coating in the groove. Applicants have amended claim 1 herein in order to progress the prosecution of the present application. Claim 1 is amended in such a manner that Examiner stated in the Summary would overcome the above outlined objections and rejections.

Further in the Action, the Examiner rejected claims 21-24, 26-30, 41, 43 and 47 under 35 U.S.C. §103(a) as being unpatentable over *Baumgartner* in view of U.S. Patent No. 4,759,769 to Hedman et al. ("*Hedman*") and U.S. Patent No. 5,926,685 to Krebs et al. ("*Krebs*") and U.S. Patent No. 6,162,252 to Kuras et al. ("*Kuras*"), and claims 21 and 25 under 35 U.S.C. §103(a) as being unpatentable over *Baumgartner* in view of *Hedman* and U.S. Patent No. 4,969,907 to Koch et al. ("*Koch*") and *Kuras*. Basically, with respect to claim 21 the Examiner is of the opinion that FIG. 5 of *Baumgartner* shows a vertebral contact element 44 having a resting shape of a dome convexly

extending from orthopedic device 2. However, the Examiner acknowledges that *Baumgartner* fails to disclose the outer surface of device 2 having a groove. Further, the Examiner asserted that *Hedman* teaches a recess or grove 34, 52 used in plate surfaces to secure or retain resilient spring elements thereon and *Krebs* teaches a coating or binder used to secure a metal mesh to an outer surface of an implant and *Kuras* teaches a perimeter and groove 56 that has a coating 96 only disposed with its region.

The Examiner contended it would have been obvious to one of ordinary skill in the art to incorporate a groove in the exterior surface to retain a compressible member therein as taught by *Hedman* and utilize a coating or binder held in a groove as taught by *Krebs* and *Kuras* in the implant of *Baumgartner* such that together, the incorporation of these exterior surface modifications secure the mesh to the implant stronger and eliminates any sliding or dislodgment of the mesh from the baseplates.

Applicants respectfully assert that a prima facie case of obviousness cannot be made because the cited references do not disclose or suggest each and every limitation in amended claim 21. Independent claim 21 is not obvious over *Baumgartner* in view of *Hedman* in view of *Krebs* and *Kuras* because the cited references neither teach nor suggest an artificial intervertebral device having an exterior surface adapted for engaging a vertebral body, the exterior surface having a groove disposed therein, and a vertebral body contact element having a perimeter and a central portion, wherein only the perimeter of said vertebral body contact element is disposed within the groove to thereby aid in securely attaching the vertebral body contact element to the exterior surface, "wherein the vertebral body contact element includes a wire mesh having a resting shape of a dome convexly extending from the spacer body such that a

gap is formed between said central portion of said vertebral body contact element and said first or second exterior surfaces."

Applicants respectfully submit that one skilled in the art would not look to secure element 44 of *Baumgartner* to plate 2 thereof by adding a groove to plate 2. The structure of the vertebral body contact element recited in claim 21 is completely different than what the Examiner refers to as a vertebral body contact element in *Baumgartner*. The only disclosure relating to the structure of element 44 shown in Fig. 5 of *Baumgartner* in the entire specification thereof is the term "metal lattice." See col.3, ll.54-55. Further, Fig. 5 (reprinted below) of *Baumgartner* shows element 44 extending over the entire surface of support 2 and also shows the perimeter of element 44 flaring upwards. There would be no reason to place a groove in plate 2 because the entire length of element 44 seems to be structured to conform to the bone of vertebral body 32 that it comes in contact with. Further, because the length of element 44 basically extends further than the edge of plate 2, a groove could not be put in plate 2 to come in contact with the perimeter of element 44. These are all reasons why there is no groove in *Baumgartner* and why one skilled in the art would not look to *Baumgartner* for retaining a compressible member in a groove as asserted by the Examiner.

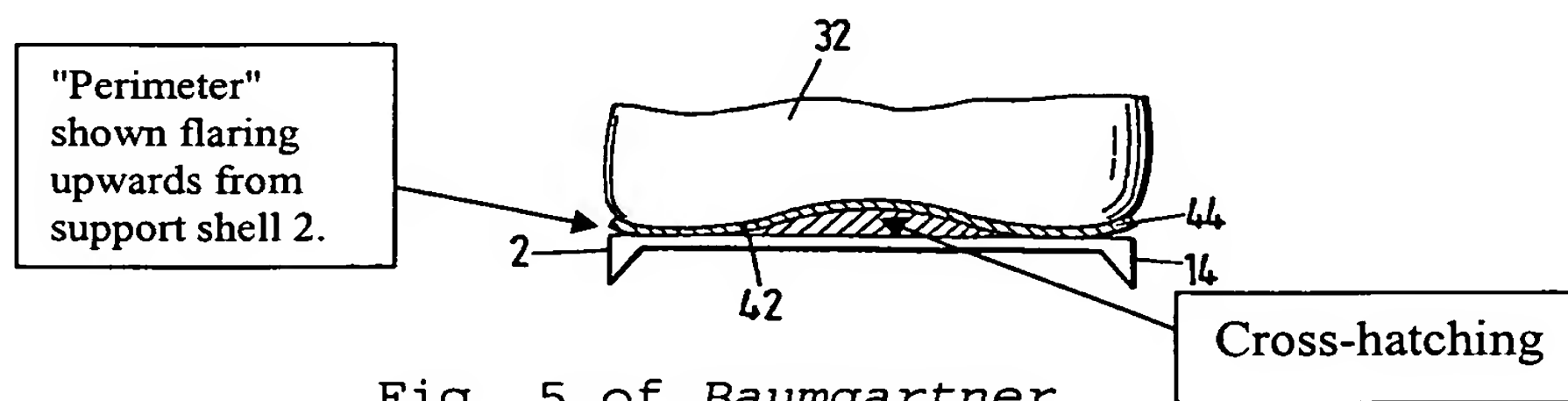


Fig. 5 of *Baumgartner*

Additionally, as shown in Fig. 5 above, a separate convex element is disposed between element 44 and baseplate 2 to aid in maintaining contact between element 44 and vertebral body

32 at a central region thereof. Applicants point the Examiner to a paragraph titled 'Sectional Views' in MPEP § 608.02 stating in part that, "[h]atching must be used to indicate section portions of an object." In the Summary, the Examiner indicated that *Baumgartner* does not make a statement that a structure is evident between element 44 and plate 2, but Applicants assert cross hatching is well known to indicate the existence of structure of an object in a figure. Further, without the addition of this separate element (cross hatched element below element 44), the central region of element 44 may not maintain contact with adjacent vertebral body 32. Further still, there is nothing in the specification of *Baumgartner* that describes element 44 having the structure of "a resting shape of a dome convexly extending from the spacer body such that a gap is formed between said central portion of said vertebral body contact element and said first or second exterior surfaces." (emphasis added). There is no "gap" or space or opening between a central portion of element 44 and plate 2 as required by amended claim 21. As stated above, the separate element fills any space between element 44 and plate 2 such that no gap exists between element 44 and plate 2.

Applicant's respectfully disagree with the Examiner's assertion that the recitation of the claimed vertebral body contact element having "a resting shape of a dome" does not impart specific structure. Applicants would like to point the Examiner to a section of paragraph [0109] of the originally filed specification to provide support for the structure of the vertebral body contact element as claimed. Paragraph [0109] states:

"Further, each baseplate 10,30 comprises a vertebral body contact element (e.g., a convex mesh 14,34, preferably oval in shape) that is attached to the outwardly facing surface 12,32 of the baseplate 10,30 to provide a vertebral body

contact surface. The mesh 14,34 is secured at its perimeter to the outwardly facing surface 12,32 of the baseplate 10,30. The mesh 14,34 is domed in its initial undeflected conformation, but deflects as necessary during insertion of the artificial disc between vertebral bodies, and, once the artificial disc is seated between the vertebral bodies, deforms as necessary under anatomical loads to reshape itself to the concave surface of the vertebral endplate. This affords the baseplate 10,30 having the mesh 14,34 substantially superior gripping and holding strength upon initial implantation as compared with other artificial disc products." (emphasis added).

The above paragraph describes why the vertebral body contact element has a resting shape of a dome. As described above, "The mesh 14,34 is domed in its initial undeflected conformation, but deflects as necessary during insertion of the artificial disc between vertebral bodies." In contrast, *Baumgartner* teaches away from such a structure. *Baumgartner* teaches that element 44 is "adapted to vertebral surface 42, into which osseous tissue of the vertebrae fuses and thus produces a very good and long-lasting connection with the intervertebral disk member." See col.3, ll.55-59. There is no indication here that element 44 has an initial undeflected conformation. The specification of *Baumgartner* seems to only suggest that the lattice naturally conforms to adjacent vertebrae 32 by allowing its outer edges to flare upwardly.

For the foregoing reasons, Applicants submit that independent claim 21 is not obvious over *Baumgartner* in view of *Hedman* in view of *Krebs* and *Kuras*. Claims 23-30 and 41 depending from independent claim 21 not obvious, *inter alia*, by virtue of their dependence from independent claim 21. A dependent claim is necessarily narrower than an independent claim from which it properly depends.

Further, the Examiner rejected claims 21 and 25 under



35 U.S.C. § 103(a) as begin unpatentable over *Baumgartner* in view of *Hedman* and *Koch* and *Kuras*. The Examiner asserted that *Baumgartner* as modified by *Hedman* fails to disclose a coating such as plasma spray for securing a metal to an implant surface. The Examiner asserted that it would have been obvious for one skilled in the art to incorporate a groove in the exterior surface to retain a compressible member therein as taught by *Hedman* and utilize a coating or binder as taught by *Krebs* and only in a groove region as taught by *Kuras* in the implant of *Baumgartner* such that together, the incorporation of these exterior surface modifications secure the mesh to the implant stronger and eliminates any sliding or dislodgment of the mesh and coating from the baseplates.

As stated above amended independent claim 21 includes recitations that are neither disclosed nor suggested in *Baumgartner*, *Hedman* or *Kuras*. As stated above, the cited references do not teach or suggest a vertebral body contact element including a wire mesh having a resting shape of a dome convexly extending from the spacer body such that a gap is formed between said central portion of said vertebral body contact element and said first or second exterior surfaces. Further, the cited references cannot be combined with *Koch* to cure this deficiency. Therefore, claim 21 is not rendered obvious by *Baumgartner* in view of *Hedman* and *Koch* and *Kuras*. Claim 25 is unobvious, *inter alia*, by virtue of its dependence from independent claims 21.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone Applicants' attorney at

(908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 502615 therefor.

Dated: November 13, 2008

Respectfully submitted,

By 

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